REMARKS/ARGUMENTS

Claims 219-257 are pending in this application.

Claims 219 and 239 have been amended to even more clearly and positively claim the recited algorithm that is adapted to determine the temperature of the liquid sample mixture as a function of the temperature of the sample block over time. Support for this amendment appears throughout the specification and claims as originally filed. For example, support appears in the specification in reference to the discussion of FIG. 16C and in original claims 1 and 2. In addition, claims 228 and 238, have each been amended to correct minor errors. No new matter has been added.

The published application has been reviewed as requested by the Examiner and has been amended to correct minor errors. No new matter has been added.

The Examiner is thanked for his helpful telephone conference with Applicants' representative Susanne M. Hopkins, on June 8, 2005. In view thereof, the published application has also been amended at paragraphs [0095], [0324], [0541], [0556], and [0561], to recite that all references to microfiche appendices herein refer to those microfiche appendices in U.S. Patent No. 5,475,610.

In view of the remarks set forth herein, further and favorable consideration is respectfully requested.

I. In item 1, on page 2 of the Office Action, the Examiner states that the IDS filed on August 31, 2004, was not made of record because a Form PTO-1449 was not filed with the IDS.

Applicant's submit that 37 C.F.R. §§ 1.97 and 1.98 do not require submission of Form PTO-1449. 37 CFR §§ 1.97 and 1.98 require submission of a list reciting each item of information. While the MPEP encourages the use of Form PTO-1449, it is not required. Please see MPEP § 609 and 37 C.F.R. § 1.98(a)(1). The subject Information Disclosure Statement listed only related United States Patent Applications and patents issuing therefrom.

Accordingly, it is submitted that the Information Disclosure Statement filed on August 31, 2004 fully complies with the requirements of 37 CFR §§ 1.97 and 1.98. Thus, the Examiner is respectfully requested to consider the August 31, 2004 Information Disclosure Statement and to expressly confirm such consideration.

II. ***In item 2 on page 2, of the Office Action, the Examiner requires cancellation of the computer program listing appearing in the specification at pages 174 to 231, or requires that a compliant computer program be filed and an appropriate reference thereto be added to the beginning of the specification.***

Responsive to the Examiner's requirement and pursuant to the telephone conference between the Examiner and Susanne M. Hopkins on June 8, 2005, the specification has been amended at paragraphs [0095], [0324], [0541], [0556], and [0561] to recite that all references to microfiche appendices herein refer to those in U.S. Patent No. 5,475,610. Accordingly, reconsideration is respectfully requested.

III. ***In item 3 on page 2, of the Office Action, the Examiner requests review of the specification for errors and correction thereof.***

Responsive to the Examiners request, the specification has been reviewed for errors and has been amended to correct same.

IV. ***In item 5 on page 3 of the Office Action, claims 219-257 have been rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claims the subject matter which applicant regards as the invention.***

The Examiner asserts that claims 219, 225, and claims that depend therefrom, are indefinite because they recite the language "is capable of" with respect to the computing apparatus. Regarding claims 219, 225, and 235, the Examiner asserts that these claims appear to invoke 35 U.S.C. § 112, second paragraph, when reciting "means for determining." The Examiner asserts that it is unclear what structures or equivalents are intended to be encompassed by this means plus function language. Regarding claim 235, the Examiner asserts that this claim is even more indefinite because it recites that the "means for determining" "comprises means for determining."

In view of the remarks set forth herein, this rejection is respectfully traversed.

Independent claims 219 and 239 have been amended to even more clearly and positively recite that the computing apparatus comprises a program adapted to determine the temperature of a liquid sample mixture as a function of the temperature of the sample block over time utilizing the recited relationship. Accordingly, it is submitted that claims 219-257, with respect to the computing apparatus, are clear and definite within the meaning of 35 U.S.C. § 112, second paragraph.

Regarding the recitation of "means for determining the temperature of the block" as recited in claims 219 and 235, specific means for determining the temperature of the sample block, are described in the present specification, for example, at paragraph [0111].

Paragraph [0111] describes that the temperature of the sample block 12 can be determined by sensing the temperature of the metal of the sample block via temperature sensor 21 and bus 52, as shown in Fig. 1. *See*, also paragraph [0143], line 2; paragraph [0146], lines 1-3; paragraph [0197]; paragraph [0312]; and paragraph [0318]. The foregoing passages disclose that the means for determining the temperature of the block can comprise structures such as temperature sensors, computer hardware, and control algorithms run by the CPU that senses the temperature of the sample block via temperature sensor 21 and bus 52. Please see paragraph [0197]. *See*, also paragraphs [0322]-[0330]. *See*, also original claims 62 and 109.

Claim 235 has been amended to recite that the means for determining the temperature of the block comprises second means for determining the temperature of the block as a function of a temperature of a previous sample interval, in order to distinguish the two recited "means for determining" from each other. The subject second means recites that the temperature can be determined as a function. Clearly, the second means includes at least an algorithm. Furthermore, the specification describes means for determining the temperature of the block in the first sample interval as a function of at least one temperature of the block in a previous sample interval, for example, at paragraphs [0222]-[0228].

Regarding claims 225, and 227-238, the recited means for determining an actual heating power that includes a plurality of submeans is described in the present specification, for example, in paragraphs [0175]-[0192], [0197]-[0201], [0599]-[0605], [0620]-[0626], [0700]-[0720], [1306], and [1432]-[1436]. For example, means for determining a theoretical second power, are described in the present specification in paragraphs [0620]-[0625] and in formula (46). *See*, also paragraph [1332]. Means for determining theoretic third powers, are described in the present specification, for example, in paragraph [0175] equation (3), paragraph [0186] equation (4), and in paragraph [0192] equation (5). *See*, also paragraph [0626]. Means for determining power losses are described in the present specification, for example, in paragraph [0700]. Means for determining the actual heating power to be applied to each heating zone as a function of the theoretical third powers and the power losses by the regions, are described in the present specification, for example, in paragraphs [0713]-[0720], [1432]-[1436], and [1306] equation (40).

In view of the foregoing, it is submitted that the present specification clearly describes structures and/or equivalents thereof intended to be encompassed by the language "means for ...." In view of the remarks herein, it is respectfully submitted that claims 219-257 are clear and definite

within the meaning of 35 U.S.C. § 112, second paragraph. Thus, the Examiner is respectfully requested to withdraw this rejection.

V. ***In item 7 on page 5 of the Office Action, claims 219-221 and 239-241 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Dean et al. (International Publication No. WO 89/09437).***

The Examiner asserts that the instant claim language is not considered to be limited to the algorithm listed in the claim since the instant claim language recites that computing apparatus is merely capable of determining and does not constitute a positively recited claim limitation.

Claims 219 and 239 have been amended to even more clearly and positively claim the recited algorithm. Claim 219 has been amended to recite "...a computing apparatus to control the heating and cooling system and ~~wherein said computing apparatus is capable of determining~~ comprising a program adapted to determine the temperature of a liquid sample mixture as a function of the temperature of ...." Claim 239 has been similarly amended.

In view of claims 219 and 239 as amended, it is submitted that Dean et al. fails to describe the algorithm recited in present claims 219 and 239. Claims 220-221 are dependent upon claim 219 and claims 240 and 241 are dependent on claim 239, thus, claims 220-221 and 240-241 should be allowable for the same reasons that claims 219 and 239 should be allowed. In view of the foregoing, it is respectfully submitted that Dean et al. fails to teach each and every element of the invention as claimed in present claims 219-221 and 239-241. Thus, the Examiner is respectfully requested to reconsider and withdraw this rejection.

VI. ***In item 11 on page 7 of the Office Action, claims 222, 231-238, 242, and 251-257, have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Dean et al. (International Publication No. WO 89/09437).***

Applicants appreciate the Interview Summary dated April 4, 2005, indicating that the above claims are the rejected claims, and not claims 226-228 and 230-232 as indicated in the office action. The Examiner asserts that it would have been obvious to the skilled artisan to optimize the size of the wells and to determine the optimum control parameters to perform a desired PCR reaction. In view of the remarks herein, this rejection is respectfully traversed.

All of the rejected claims are dependent upon either claim 219 or 239. Claims 219 and 239 have been amended to even more clearly and positively claim the recited algorithm. As discussed

herein, Dean et al. fails to disclose or suggest the algorithm as claimed in present claims 219 and 239.

It is submitted that nothing in Dean et al. renders the claimed invention obvious within the meaning of 35 U.S.C. § 103(a). Thus, the Examiner is respectfully requested to withdraw this rejection.

VII. In item 13 on page 8 of the Office Action, claims 219-257 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 7-10, 26-28, 31, 42, 44, 45, 53, 54, 59, 97, 98, and 117, of U.S. Patent No. 5,475,610.

The Examiner asserts that the conflicting claims are not identical, but they are not patentably distinct from each other because present claims 219-257 are generic to all that is recited in the noted claims of U.S. Patent No. 5,475,610. In view of the remarks set forth herein and the Terminal Disclaimer filed herewith, this rejection is respectfully traversed.

Attached hereto please find a Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c). The Terminal Disclaimer serves to disclaim the terminal part of any patent granted on the present application which would extend beyond the expiration of U.S. Patent No. 5,475,610 as shortened by any Terminal Disclaimer, and states that Petitioner agrees that any patent so granted on the present application shall be enforceable only for and during such period that it and U.S. Patent No. 5,475,610 are commonly owned. The agreement runs with any patent granted on the present application and is binding upon the grantee, its successors, or assigns.

In view of the Terminal Disclaimer filed herewith, the Examiner is respectfully requested to withdraw this rejection. Reconsideration is earnestly solicited.

VIII. In item 14 on page 9 of the Office Action, claims 219, 223-225, 239, and 243-245, have been rejected under the judicially created doctrine of obvious-type double patenting as being unpatentable over claims 7-9 of U.S. Patent No. 6,703,236.

The Examiner asserts that the conflicting claims are not identical but they are not patentably distinct from one another because the present claims are generic to all that is recited in claims 7-9 of U.S. Patent No. 6,703,236. In view of the remarks set forth herein and the Terminal Disclaimer filed herewith, this rejection is respectfully traversed.

Attached hereto please find a Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c). The Terminal Disclaimer serves to disclaim the terminal part of any patent granted on the present

application which would extend beyond the expiration of U.S. Patent No. 6,703,236 as shortened by any Terminal Disclaimer, and states that Petitioner agrees that any patent so granted on the present application shall be enforceable only for and during such period that it and U.S. Patent No. 6,703,236 are commonly owned. The agreement runs with any patent granted on the present application and is binding upon the grantee, its successors, or assigns.

In view of the Terminal Disclaimer filed herewith, the Examiner is respectfully requested to withdraw this rejection. Reconsideration is earnestly solicited.

CONCLUSION

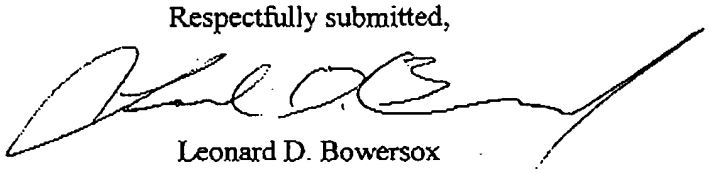
Applicants respectfully request favorable consideration of the present application and a timely allowance of the pending claims.

The undersigned representative is authorized to act as Applicants' representative, is signing under 37 C.F.R. § 1.33(b)(1), and has authority under 37 C.F.R. § 1.34(b).

Should the Examiner deem that any further action by Applicants or Applicants' representative is desirable and/or necessary, the Examiner is invited to telephone the attorney or agent of record.

If there are any other fees due in connection with the filing of this response, please charge such fees to deposit Account No. 50-0925. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and should also be charged to said Deposit Account.

Respectfully submitted,



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